

*Tier 2 vehicle* means any vehicle certified to comply with the Tier 2 FTP exhaust standards contained in § 86.1811-04 including the 0.07 g/mi fleet average NO<sub>x</sub> standard.

*Tier 3* means relating to the Tier 3 emission standards described in §§ 86.1811-17, 86.1813-17, and 86.1816-18.

*Total hydrocarbon equivalent* means the sum of the carbon mass emissions of non-oxygenated hydrocarbons, methanol, formaldehyde or other organic compounds that are separately measured, expressed as gasoline-fueled vehicle hydrocarbons. In the case of exhaust emissions, the hydrogen-to-carbon ratio of the equivalent hydrocarbon is 1.85:1. In the case of diurnal and hot soak emissions, the hydrogen-to-carbon ratios of the equivalent hydrocarbons are 2.33:1 and 2.2:1, respectively.

*Track width* is the lateral distance between the centerlines of the base tires at ground, including the camber angle.

*Trading* means the exchange of complete heavy-duty vehicle NO<sub>x</sub> emission credits between manufacturers.

*Transmission class* has the meaning given in § 600.002-08 of this chapter.

*Transmission configuration* has the meaning given in § 600.002-08 of this chapter.

*United States* has the meaning given in 40 CFR 1068.30.

*U.S. heavy-duty vehicle sales* means sales of heavy-duty vehicles subject to the standards of this subpart, where the sale takes place in any state of the United States except for California (or a state that has adopted California motor vehicle standards for that model year pursuant to section 177 of the Clean Air Act).

*U.S. sales* means, unless otherwise specified, sales in any state or territory of the United States except for California or the section 177 states. Sale location is based on the point of first sale to a dealer, distributor, fleet operator, broker, or other entity.

*Unproven emission control systems* are emission control components or systems (and fuel metering systems) that do not qualify as proven emission control systems.

*Unscheduled maintenance* means any adjustment, repair, removal disassembly, cleaning, or replacement of

vehicle components or systems which is performed to correct a part failure or vehicle (if the engine were installed in a vehicle) malfunction which was not anticipated.

*US06* means the test cycle, described in § 86.159-00 and listed in appendix I, paragraph (g), of this part, which is designed to evaluate emissions during aggressive and microtransient driving.

*Useful life* means the period of use or time during which an emission standard applies to light-duty vehicles and light-duty trucks, as described in § 86.1805-01.

*Van* means a light-duty truck or complete heavy-duty vehicle having an integral enclosure, fully enclosing the driver compartment and load carrying device, and having no body sections protruding more than 30 inches ahead of the leading edge of the windshield.

*Vehicle configuration* means a unique combination of basic engine, engine code, inertia weight class, transmission configuration, and axle ratio.

*Volatile liquid fuel* means any fuel other than diesel or biodiesel that is a liquid at atmospheric pressure and has a Reid Vapor Pressure higher than 2.0 pounds per square inch.

*We (us, our)* means the Administrator of the Environmental Protection Agency and any authorized representatives.

*Wheelbase* is the longitudinal distance between front and rear wheel centerlines.

*Zero (0) miles* means that point after initial engine starting (not to exceed 100 miles of vehicle operation, or three hours of engine operation) at which normal assembly line operations and adjustments are completed, and including emission testing, if performed.

[64 FR 23925, May 4, 1999, as amended at 65 FR 6851, Feb. 10, 2000; 65 FR 59964, Oct. 6, 2000; 66 FR 5189, Jan. 18, 2001; 71 FR 2829, Jan. 17, 2006; 72 FR 8561, Feb. 26, 2007; 75 FR 25683, May 7, 2010; 77 FR 34146, June 8, 2012; 77 FR 63155, Oct. 15, 2012; 79 FR 23707, Apr. 28, 2014]

#### § 86.1804-01 Acronyms and abbreviations.

The following abbreviations apply to this subpart:

A/C—Air conditioning.

AECD—Auxiliary emission control device.

A/F—Air/Fuel

ALVW—Adjusted Loaded Vehicle Weight.

## Environmental Protection Agency

§ 86.1804-01

API—American Petroleum Institute.  
ASTM—American Society for Testing and Materials.  
BAT—Bench-Aging Time  
C—Celsius.  
cfm—Cubic feet per minute.  
CFV—Critical flow venturi.  
CFV-CVS—Critical flow venturi—constant volume sampler.  
CH<sub>3</sub>OH—Methanol.  
CID—Cubic inch displacement.  
Cl—Chemiluminescence.  
CO—Carbon monoxide.  
CO<sub>2</sub>—Carbon dioxide.  
conc.—Concentration.  
CST—Certification Short Test.  
cu. in.—Cubic inch(es).  
CVS—Constant volume sampler.  
DDV—Durability Data Vehicle.  
deg.—Degree(s).  
DNPH—2,4-dinitrophenylhydrazine.  
EDV—Emission Data Vehicle.  
EP—End point.  
ETW—Equivalent test weight.  
F—Fahrenheit.  
FEL—Family Emission Limit.  
FID—Flame ionization detector.  
ft.—Feet.  
FTP—Federal Test Procedure.  
g—gram(s).  
gal.—U.S. gallon(s).  
GC—Gas chromatograph.  
GVW—Gross vehicle weight.  
GVWR—Gross vehicle weight rating.  
H<sub>2</sub>O—Water.  
HC—Hydrocarbon(s).  
HCHO—Formaldehyde.  
HDV—Heavy-duty vehicle.  
HEV—Hybrid electric vehicle.  
HFID—Heated flame ionization detector.  
Hg—Mercury.  
HLDT—Heavy light-duty truck. Includes only those trucks over 6000 pounds GVWR (LDT3s and LDT4s).  
HLDT/MDPV—Heavy light-duty trucks and medium-duty passenger vehicles.  
hp—Horsepower.  
HPLC—High-pressure liquid chromatography.  
IBP—Initial boiling point.  
in.—Inch(es).  
IUV—In-Use Verification Program.  
K—Kelvin.  
kg—Kilogram(s).  
km—Kilometer(s).  
kPa—Kilopascal(s).  
lb.—Pound(s).  
LDT1—Light-duty truck 1.  
LDT2—Light-duty truck 2.  
LDT3—Light-duty truck 3.  
LDT4—Light-duty truck 4.  
LDV/LLDT—Light-duty vehicles and light-duty trucks. Includes only those trucks rated at 6000 pounds GVWR or less (LDT1s and LDT2s).  
LDV/T—Light-duty vehicles and light-duty trucks. This term is used collectively to

include, or to show that a provision applies to, all light-duty vehicles and all categories of light-duty trucks, i.e.  
LDT1, LDT2, LDT3 and LDT4.  
LEV—Low Emission Vehicle.  
LPG—Liquefied Petroleum Gas.  
m—Meter(s).  
max.—Maximum.  
MDPV—Medium-duty passenger vehicle.  
mg—Milligram(s).  
mi.—Mile(s).  
min.—Minimum.  
ml—Milliliter(s).  
mm—Millimeter(s).  
mph—Miles per hour.  
mV—Millivolt  
N<sub>2</sub>—Nitrogen.  
NDIR—Nondispersive infrared.  
NLEV—Refers to the National Low Emission Vehicle Program. Regulations governing this program are found at subpart R of this part.  
NMHC—Nonmethane Hydrocarbons.  
NMHCE—Non-Methane Hydrocarbon Equivalent.  
NMOG—Non-methane organic gases.  
NO—nitric oxide.  
No.—Number.  
O<sub>2</sub>—Oxygen.  
OEM—Original equipment manufacturer.  
NO<sub>2</sub>—Nitrogen dioxide.  
NO<sub>x</sub>—Oxides of nitrogen.  
Pb—Lead.  
pct.—Percent.  
PDP-CVS—Positive displacement pump—constant volume sampler.  
ppm—Parts per million by volume.  
PM—Particulate Matter.  
ppm C—Parts per million, carbon.  
psi—Pounds per square inch.  
R—Rankin.  
RAF—Reactivity adjustment factor.  
rpm—Revolutions per minute.  
RVP—Reid vapor pressure.  
s—Second(s).  
SAE—Society of Automotive Engineers.  
SBC—Standard Bench Cycle  
SFTP—Supplemental Federal Test Procedure.  
SI—International system of units.  
SRC—Standard Road Cycle  
SULEV—Super Ultra Low Emission Vehicle.  
TD—dispensed fuel temperature.  
THC—Total Hydrocarbons.  
THCE—Total Hydrocarbon Equivalent.  
TLEV—Transitional Low Emission Vehicle.  
UDDS—Urban dynamometer driving schedule.  
ULEV—Ultra Low Emission Vehicle.  
UV—Ultraviolet.  
vs—Versus.  
W—Watt(s).  
WOT—Wide open throttle.  
Wt.—Weight.

## § 86.1805-04

ZEV—Zero Emission Vehicle.

[64 FR 23925, May 4, 1999, as amended at 65 FR 6852, Feb. 10, 2000; 65 FR 59965, Oct. 6, 2000; 71 FR 2829, Jan. 17, 2006]

### § 86.1805-04 Useful life.

(a) Except as required under paragraph (b) of this section or permitted under paragraphs (d), (e) and (f) of this section, the full useful life for all LDVs, LDT1s and LDT2s is a period of use of 10 years or 120,000 miles, whichever occurs first. For all HLDTs, MDPVs, and complete heavy-duty vehicles full useful life is a period of 11 years or 120,000 miles, whichever occurs first. This full useful life applies to all exhaust, evaporative and refueling emission requirements except for standards which are specified to only be applicable at the time of certification.

(b) Manufacturers may elect to optionally certify a test group to the Tier 2 exhaust emission standards for 150,000 miles to gain additional NO<sub>x</sub> credits, as permitted in § 86.1860-04(g), or to opt out of intermediate life standards as permitted in § 86.1811-04(c). In such cases, useful life is a period of use of 15 years or 150,000 miles, whichever occurs first, for all exhaust, evaporative and refueling emission requirements except for cold CO standards and standards which are applicable only at the time of certification.

(c) Where intermediate useful life exhaust emission standards are applicable, such standards are applicable for five years or 50,000 miles, whichever occurs first.

(d) Where cold CO standards are applicable, the useful life requirement for compliance with the cold CO standard only, is 5 years or 50,000 miles, whichever occurs first.

(e) Where LDVs, LDT1s and LDT2s of the 2003 or earlier model years are certified to Tier 2 exhaust emission standards for purposes of generating early Tier 2 NO<sub>x</sub> credits, manufacturers may certify those vehicles to full useful lives of 100,000 miles in lieu of the otherwise required 120,000 mile full useful lives, as provided under § 86.1861-04(c)(4).

(f) For interim non-Tier 2 LDV/LLDTs, the useful life requirement for exhaust, evaporative and refueling

## 40 CFR Ch. I (7-1-14 Edition)

emissions is 10 years or 100,000 miles, whichever occurs first.

(g) Where cold temperature NMHC standards are applicable, the useful life requirement for compliance with the cold temperature NMHC standard only is as follows:

(1) For LDV/LLDTs, 10 years or 120,000 miles, whichever occurs first.

(2) For HLDT/MDPVs, 11 years or 120,000 miles, whichever occurs first.

[65 FR 6852, Feb. 10, 2000, as amended at 65 FR 59965, Oct. 6, 2000; 72 FR 8561, Feb. 26, 2007]

### § 86.1805-12 Useful life.

(a) Except as permitted under paragraph (b) of this section or required under paragraphs (c) and (d) of this section, the full useful life for all LDVs and LLDTs is a period of use of 10 years or 120,000 miles, whichever occurs first. The full useful life for all HLDTs, MDPVs, and complete heavy-duty vehicles is a period of 11 years or 120,000 miles, whichever occurs first. These full useful life values apply to all exhaust, evaporative and refueling emission requirements except for standards which are specified to only be applicable at the time of certification. These full useful life requirements also apply to all air conditioning leakage credits, air conditioning efficiency credits, and other credit programs used by the manufacturer to comply with the fleet average CO<sub>2</sub> emission standards in § 86.1818-12.

(b) Manufacturers may elect to optionally certify a test group to the Tier 2 exhaust emission standards for 150,000 miles to gain additional NO<sub>x</sub> credits, as permitted in § 86.1860-04(g), or to opt out of intermediate life standards as permitted in § 86.1811-04(c). In such cases, useful life is a period of use of 15 years or 150,000 miles, whichever occurs first, for all exhaust, evaporative and refueling emission requirements except for cold CO standards and standards which are applicable only at the time of certification.

(c) Where intermediate useful life exhaust emission standards are applicable, such standards are applicable for five years or 50,000 miles, whichever occurs first.

(d) Where cold CO standards are applicable, the useful life requirement for